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ABSTRACT

This monograph discusses using an approach based on perceptual control theory (PCT) to teach self-control to children and youth with emotional and behavioral disorders. PCT is described as a general approach to understanding self-regulated systems that relies on the theory that behavior controls an individual's perceptions rather than the perceptions controlling behavior generally assumed by most people. After an introductory chapter, Chapter 2, "Overview of Perceptual Control Theory," describes the basic tenets of PCT and includes real-life examples, describes the levels of PCT, and compares PCT to some traditional conceptualizations of behavior to provide a frame of reference for the intervention techniques. Chapter 3, "Questioning Method for Getting Children and Youth to Think," describes the rationale for questioning children and youth and provides five recommended questions for teaching self-control. Chapter 4, "Teaching Children and Youth to Make a Plan," discusses the five components in this process, including identifying an area for improvement, setting a measurable goal, creating a detailed outline, self-monitoring performances, and setting up a feedback chart depicting process. A sample planning sheet and feedback chart are provided. A concluding chapter describes ways for dealing with children and youth who continually break rules. (Contains 34 references.) (CR)

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Teaching Children & Youth Self-Control

Applications of Perceptual Control Theory

John W. Maag

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Lyndal M. Bullock & Robert A. Gable, *Series Editors*

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From the Second CCBD Mini-Library Series: Successful Interventions for the 21st Century

Teaching Children and Youth Self-Control

Applications of Perceptual Control Theory

Joan W. Marr

Lyndal M. Bullock & Robert A. Gable, *Series Editors*

The Council for Children with Behavioral Disorders, *Publisher*

3

About the Council for Children with Behavioral Disorders

CCBD is an international professional organization committed to promoting and facilitating the education and general welfare of children and youth with behavioral and emotional disorders. CCBD, whose members include educators, parents, mental health personnel, and a variety of other professionals, actively pursues quality educational services and program alternatives for persons with behavioral disorders, advocates for the needs of such children and youth, emphasizes research and professional growth as vehicles for better understanding behavioral disorders, and provides professional support for persons who are involved with and serve children and youth with behavioral disorders.

In advocating for the professionals in the field of behavioral disorders, CCBD (a division of The Council for Exceptional Children) endorses the Standards for Professional Practice and Code of Ethics adopted by the Delegate Assembly of The Council for Exceptional Children in 1983.

About This Monograph

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4

Contents

Foreword v

1. Introduction 1

2. Overview of Perceptual Control Theory 7
   - Basic Tenant 7
   - Levels of PCT 10
   - Making Sense of PCT 14

3. Questioning Method for Getting Children and Youth to Think 17
   - Rationale for Questioning 18
   - Questions That Get Children and Youth to Think 19

4. Teaching Children and Youth to Make a Plan 25
   - Identify Area for Improvement 26
   - Set a Measurable Goal 26
   - Create a Detailed Outline 27
   - Self-Monitor Performance 30
   - Set up a Feedback Chart 32

5. Summary and Conclusions 37

6. References 41

Foreword

This is the second mini-library series that addresses the needs of students identified as "seriously emotionally disturbed" or "emotionally/behaviorally disordered." As with the first series, the content stems from selected presentations at an international conference sponsored by the Council for Children with Behavioral Disorders (CCBD). These monographs are also a response to the reality that the number of children and youth who evidence challenging behavior is growing. These students manifest a range of social, academic, and behavior problems that test the skills of even the most capable classroom teachers. Educators and other professionals are struggling to find ways to deal successfully with the mounting challenges these students present.

Fortunately, as the number of problems increases, so too does the body of accumulated literature on practices of proven effectiveness for students with emotional/behavioral disorders (EBD). Drawing upon the expertise of CCBD members, we have assembled a seven-volume series of monographs that delve into some of the specific areas and programs for students with EBD and the education professionals who work with them:

- *Alternative Programs for Students with Social, Emotional, or Behavioral Problems*
  Mary Magee Quinn and Robert B. Rutherford, Jr.
- *Curriculum and Instruction Practices for Students with Emotional/Behavioral Disorders*
  Rex E. Schmid and William Evans, Editors

- *Developing Personal and Interpersonal Responsibility in Children and Youth with Emotional/Behavioral Disorders*
  Sylvia Rockwell, Santa Cuccio, Beth Kirtley, and Gwen Smith
- *Developing Social Competence in Children and Youth with Challenging Behaviors*
  Kristine J. Melloy, Carol A. Davis, Joseph H. Wehby, Francie R. Murry, and Jennifer Leiber
- *Enhancing Self-Respect: A Challenge for Teachers of Students with Emotional/Behavioral Disorders*
  Ann Fitzsimons-Lovett
- *Individual and Systemic Approaches to Collaboration and Consultation on Behalf of Students with Emotional/Behavioral Disorders*
  Robert A. Gable, George Sugai, Tim Lewis, J. Ron Nelson, Douglas Cheney, Stephen P. Safran, and Joan S. Safran
- *Teaching Children and Youth Self-Control: Applications of Perceptual Control Theory*
  John W. Maag

In these seven monographs, we have attempted to bring together information that addresses the needs of general and special educators, administrators, and other professionals who face the myriad challenges of children and youth at risk for or with EBD. We are grateful for the contributions of the monograph authors and hopeful that their efforts will prove useful to you in your work on behalf of students with EBD.

Lyndal M. Bullock
University of North Texas

Robert A. Gable
Old Dominion University

Series Editors

1 Introduction

Children and adolescents with emotional/behavioral disorders (EBD) present a staggering array of challenging behaviors that often require intensive intervention. These behaviors may reflect externalizing problems such as aggression, noncompliance, inattention, temper tantrums, and impulsivity or internalizing problems such as fearfulness, withdrawal, depression, and anxiety (Achenbach, 1985). These behaviors interfere with children's academic performance and interpersonal relationships (Kauffman, 1997). Given these difficulties, it should come as no surprise that children with EBD often experience high levels of social rejection among both peers and adults. Poor peer relations, in turn, are associated with school dropout, juvenile and adult crime, and adult mental health problems (Parker & Asher, 1987). Consequently, children's maladaptive behaviors continue to challenge school personnel as well as cause grave concern for the general public (Sautter, 1995).

Many effective interventions for ameliorating behavior problems of children with EBD are based on operant learning principles. For example, successful behavior modification programs have made use of *behavioral contracting, token economies, group-oriented contingencies, response cost,* and *time-out*. Although these techniques have been highly developed and widely researched, they have also been criticized from many fronts. For example, Axelrod (1996) pointed out that techniques based on positive reinforcement — giving children rewards for performing certain behaviors — are often viewed by many factions of society as amounting to little more than bribery. Practitioners often point to a more pertinent criticism, namely the lack of evidence that behavioral improvements obtained in special educa-

tion classrooms transfer to general education classrooms. This problem becomes even more acute given the current inclusion zeitgeist in which all students, regardless of disability, spend most or all of their time in general education classrooms. In particular, students with EBD often demand additional instructional resources and specially trained personnel to manage their seriously maladaptive behavior in an inclusive setting (Braaten, Kauffman, Braaten, Polsgrove, & Nelson, 1988).

Many teachers neither view managing the behavior of students with EBD within their purview nor believe that they have the time and expertise to infuse interventions for remediating interpersonal difficulties into their classroom routines (Maag & Webber, 1995). Even if teachers did possess the desire and expertise, it is questionable whether they would be rewarded for implementing intensive behavior management programs. Nevertheless, with today's inclusive classrooms, school personnel need to know effective approaches for teaching children with EBD how to behave appropriately in various situations and how to make socially responsible decisions about their own behavior.

Unfortunately, children's behavior frequently remains dependent on teacher-controlled interventions. This approach to intervention is antithetical to one of the ultimate goals of education—to develop independent and self-directed persons capable of behaving appropriately and constructively without the supervision of others (Cooper, Heron, & Heward, 1987). However, this goal of independence can be reached by teaching children self-control so that they are more likely to make responsible decisions about and attainable plans for the way they behave.

There are a variety of theoretical approaches and techniques for teaching children self-control including the following:

1. One approach has been to conceptualize self-control as differing from externally managed behavior only in assigning responsibility for managing the procedures (Young, West, Smith, & Morgan, 1991). For example, instead of a teacher managing a token economy, a child would conduct the necessary activities.

2. A second, somewhat similar, approach views self-control as a by-product of children arranging their environment to improve their discrimination of, and response to, the environmental contingencies that ultimately control their behavior (Nelson & Hayes, 1981). The key concern here for teaching self-control to students with EBD is to help them take delayed consequences and arrange them into more immediate consequences. For example, end-of-the-semester grades have little effect over some children's behavior because these consequences are too far removed. Instead, the short-term consequence of playing may be more reinforcing and, consequently, controls the behavior.
3. A third approach focuses on a cognitive multistage process in which children and youth observe their own behavior, evaluate their performance against some standard, and provide consequences for their behavior in accord with their performance (Kanfer & Gaelick-Buys, 1991).

Regardless of the approach, *children and youth who control their own behavior manipulate external variables and think about their goals and performance in order to motivate themselves to behave certain ways.* One approach for teaching self-control, which has received much less attention yet addresses the previous remark, is based on *perceptual control theory* (PCT). PCT is a general approach to understanding self-regulated systems that has its origins in the work of cyberneticists such as Norbert Wiener (1948) and in the field of engineering. However, it was Powers's (1973) influential book, *Behavior: The Control of Perception*, that ushered in an era of how PCT applies to human behavior. Unlike other theories in which behavior is controlled by either environmental or cognitive variables, PCT views behavior as control. That is to say, behavior controls an individual's perceptions although most of us would assume that perception controls behavior.

At this point, the brief description of PCT may seem vague and cryptic—and understandably so. Consider the apparently enigmatic explanation that the purpose of behavior is to maintain a perception between some internal reference signal and the external environ-

ment. Put another way, behavior is control (Powers, 1973). The task of understanding PCT is further exacerbated because this complicated theory often is explained with engineering diagrams and mathematical formulas.

Nevertheless, educational and clinical applications of PCT for promoting self-control with children and youth with EBD hold real promise. The basic tenant of PCT, as it is applied to changing behavior, is that people can change themselves—other people, including parents, teachers, and therapists, only serve as a *"disturbance"* which may start the learning process (Goldstein, 1990). Hence, the focus is not on *"fixing"* children but rather on helping children to *"fix"* themselves. Only an individual can exert control by using internal rules and standards as a guide for behaving in certain ways. Consequently, PCT is commensurate with the goal of teaching children self-control.

Therefore, this monograph focuses on PCT and aims to accomplish the following three purposes:

1. To provide an overview of PCT that hopefully will de-mystify this theory and lay the groundwork for the applications described in the subsequent sections of this monograph.
2. To describe a questioning method that can be used to help students identify their goals and evaluate whether their behavior is promoting or obstructing the acquisition of their goals.
3. To describe a method for helping students make a plan to change their behavior in order to attain their goals independently and in a socially responsible manner.

Before preceding, I want to stress that PCT is not a panacea and applications to education and psychotherapy have only recently begun to be explored. In addition, some of the techniques appear to borrow from other approaches such as William Glasser's (1965) reality therapy and more traditional cognitive and behavioral conceptualizations of self-monitoring, self-evaluation, and goal setting — although I doubt whether staunch advocates of PCT would

agree with this opinion. Nevertheless, it is my hope that, through applications of PCT, children and youth can be taught that they have the ability to make responsible choices; to select practical goals and accomplish them; and, consequently, to interact in a pleasant and socially appropriate way with others.

Overview of Perceptual Control Theory 2

Perceptual control theory (PCT) offers a description of human behavior that provides an alternative to behaviorism and cognitive psychology. It provides a method for analyzing a closed circle of causation involving how individuals sense and act on their environment (Powers, 1990). In the following paragraphs, I will describe the basic tenant of PCT and include some real-life examples, describe the levels of PCT, and compare it to some traditional conceptualizations of behavior in order to provide a frame of reference for the intervention techniques described later in this monograph.

Basic Tenant

The basic tenant of PCT is that humans control their own inputs. We comprehend the environment by taking in stimuli through millions of sensors that correspond to the five senses. Our sensors affect how we perceive the external world and, thus, our production of behavior. At this point, it may be tempting to think of PCT as simply another cognitive interpretation of reality: Perception leads to stable cognitive patterns called *schemata* that are used to interpret situations and mediate behavior. However, according to PCT, behavior and perception are considered part of a closed control loop — the behavior serving to maintain the perception at whatever level is currently specified by an inner reference signal.

In PCT, a sensory signal entering the control system does not cause the occurrence of any particular behavior. Behavior is not based on the perception but on the *difference* between the perception's state and the state currently being specified by the reference signal. Consequently, *PCT focuses on feedback* — the results of behavior rather than behaviors themselves. Pitman (1987) provides an example of how PCT works using the analogy of a person adjusting a thermostat:

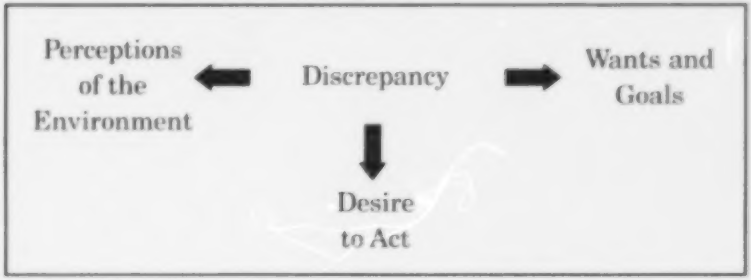
> The person's comparator calculates the difference between an internal comfort perceptual signal and an internal comfort reference signal and generates an internal error signal, which represents his discomfort. This error signal then generates the external behavior of adjusting the thermostat's setting. When the error signal is brought to zero, behavioral output ceases, i.e., the person stops adjusting the thermostat when he feels comfortable. (p. 335)

Accordingly, we deal with the external world to satisfy our own internal goals (Ford, 1994). Regardless of what happens to us as we interact with the environment, the ultimate reason for behaving in certain ways is to fulfill our own individually set values, goals, and standards. In other words, individuals behave in a way to reduce the discrepancy between their perception of the environment and what they want — their goals. This conceptualization is presented in Figure 1.

A few examples of how Figure 1 translates into real-life functioning may be helpful.

> **Example 1:** During the summer my two young sons and I often play in the front yard of our house. Although we live on a fairly quiet street, cars nevertheless drive by fairly often. When cars drive by at what I consider to be a reasonable speed, I typically do not give their passing a second thought. But if a car were to drive by at 50 M.P.H., that would conflict with my own internal goal of what a safe speed driving through my neighborhood should be. Consequently, I might grab my sons' hands or yell at the car to slow down. These two behaviors serve to reduce the discrepancy between what I perceive in the environment (speeding car) and what I want (my sons to be safe). My

Figure 1. Model of Perceptual Control Theory.



behaviors of yelling or grabbing my sons' hands served to maintain my perception of wanting my sons to be safe. Hence, behavior controls the perception of what a person wants.

In PCT, what comes to mind is what an individual wants (Ford, 1994). It comes to mind because something occurs in the environment which does not compare favorably to something the individual wants. Typically, things in the environment do not disturb unless they fail to conform to the person's own internally set goals. Comparing what is happening around him or her to what the individual wants propels that individual to behave in certain ways — but only when there are differences between the two. If one's perception of the environment and what he or she wants compares favorably, then that person does not have any reason to behave.

Example 2: This example is based on a story Ford (1994) used to illustrate the basic ideas of PCT. Glenn is a seventh grader in Mr. Anderson's math class. Children were assigned a page of math problems to complete independently during the last 15 minutes of class. Glenn thought the work was boring and wanted some attention from Barb whom he thought was cute. He reaches over and writes "Hi" on the side of her assignment. She looks at him, smiles, and then returns to her work. Glenn briefly got what he wanted. In order to have the good feeling continue, he reaches over and draws a smiley face on her paper. Mr. Anderson noticed this second attempt at getting Barb's attention and told Glenn to get to work. Glenn pretended to work on his problems as he wrote Barb a note.

A PCT explanation for this interaction would begin by identifying that Glenn's goal was some attention from Barb. He perceived Barb working on the assignment and ignoring him. Glenn compared what he wanted with his perception and determined that a discrepancy existed between the two that caused some level of personal discomfort. Writing on Barb's paper was a way to reduce the discomfort originating from the difference between wanting Barb to notice him and what he saw, which was Barb working on her assignment. Therefore, what prompted his behavior was the difference between his goal and what he perceived in his environment. And Glenn's behavior of writing "Hi" on Barb's assignment worked, albeit temporarily, because she looked at him and smiled.

However, when Barb returned to her work the discrepancy between his goal and perception returned. Therefore, Glenn again tried to change the environment to conform to his goal by drawing a smiley face on her assignment. This behavior again reduced the discrepancy between his perception and goal. However, Mr. Anderson's reprimand represented a disturbance affecting Glenn's ability to behave in a way as to perceive what he wanted. As a result, he stopped writing on Barb's paper and instead pretended to work as he wrote her a note. When Mr. Anderson was not looking, he passed the note to Barb who again looked over and smiled. Glenn's goal was again satisfied while avoiding the disturbance created by Mr. Anderson's reprimand.

Levels of PCT

In some respects, the human perceptual system is similar to the concept of schema in cognitive psychology. That is, people selectively attend to specific environmental stimuli that past experience has told them are important. These stimuli are then combined into a pattern, or *schema*, to conceptualize and interpret a situation. Schemata allow us to transform data into *cognitions*. Cognitions are ideas, expressed through self-talk or self-images, that direct behavior and processing. Consequently, a schema constitutes the basis for screening out, differentiating, and coding the stimuli that confront us (Beck,

Rush, Shaw, & Emery, 1979). In PCT, a person's perceptual system creates an individual understanding of the world. Stimuli sensed by an individual's system pass in sequence through a series of unique controls and slowly develop into the way that individual understands his or her environment. Ford (1989) likened this process to the operation of a camera with various functions and a series of lenses attached:

> What gives your picture its individuality is where you point the camera, when you snap the picture, and probably most important of all, how you manipulate the lens opening, the depth of focus, and each lens. As you adjust all this equipment, you give the picture a reflection of your own personality, of how you think the subject should look, of what you want. Each function has its own peculiar characteristics—whether to filter out light, to add certain colors, or whatever. The final product will always differ in some way from other photographs of the same subject because of your own way of adjusting the apparatus to create what you want. This process of creating a photograph is similar to how each of us constructs our perceptions. (p. 15)

Ford (1989) went on to say that the way persons manipulate their control system — their internal camera — is what gives each a unique view of the world. He also described how the human control system is made up of 11 different levels which are used to perceive and understand the environment. Like schemata, these control levels are influenced by a person's past experiences. They are organized according to whether they correspond to experience or concept levels. Tables 1 and 2 provide a brief summary of Ford's description of the experience and concept levels, respectively.

Experience levels reflect knowledge acquired through sensing the environment. They may roughly be compared to Piaget's sensory-motor stage of cognitive development. The six experience levels focus on helping children develop an understanding of the world from their perceptual signals. As individuals pass through the initial concept levels, they begin to form conceptual symbols based on experiences. At the higher, concept levels, individuals create their perceptions of others and, as a result, decide how they should or should not

Table 1
Experience Levels of PCT

Level	*Description*
Intensity	Sensory receptors, corresponding to the five senses, are the way awareness of the environment enters the brain. Neural currents flowing in through the senses are arranged so that the next level can use the information to form an understandable perception. This level also relates to the next level the amount of incoming energy.
Sensation	Data are experienced in terms of rough or smooth, bright or dim, loud or soft, hot or cold, and so forth. Further understanding of this energy is constructed through some kind of recognizable shape or form at the third level.
Configuration	Incoming data are configured (e.g., ideas of foods are created though experiencing various sense signals such as taste, smell, texture, temperature, ease of chewing, and its visual appearance). Combinations of sensed energy in patterns and forms are recognized but not labeled.
Transition	Rates of change of any lower perception are understood. Movement, changes in illumination, or variations in sound intensity are experienced (e.g., notice a ball getting bigger, spinning, and approaching speed when thrown). A sense of transition or a change in configuration is provided (e.g., notice that shower water suddenly got colder when someone flushed a toilet).
Events	Events are noticed as segmented happenings (e.g., a door shuts, someone enters a room, a spoon falls on the floor). Continuity of happenings are recognized.
Relationship	Connections between objects are perceived although they cannot yet be conceptually identified (e.g., stepping on a dog's paw and the dog yelping, hearing a phone ring and picking up the phone).

Table 2
Concept Levels of PCT

Level	*Description*
Category	This level is where classifications are made (e.g., spouse is classified as either "husband" or "wife"). A symbol (word) is substituted for persons or experiences. Actions perceived through experience at the event level are now categorized (e.g., washing a dish, petting a dog, hitting a ball).
Sequence	Order in which things happen becomes important (e.g., get out a frying pan, crack two eggs, cook them, put eggs on a plate, eat them, wash the dish). Doing things (categories of action) out of sequence are identified as wrong.
Program	The element of conscious decision making is added to a series of actions (e.g., shopping for groceries and deciding which fruits are the best buy and then individually checking for ripeness).
Principles	Realization occurs that there are some conditions under which certain actions seem to work and are acceptable and other conditions under which they are not. Standards and rules are established from experiences (e.g., a teacher deciding whether it is worth interrupting a lesson to reprimand one misbehaving child). When faced with a new experience without preestablished standards, people hopefully will evaluate either the values and beliefs that reflect that category of experience or the consequences of certain behavior to determine a standard.
Systems Concept	This is the level at which a style of living evolves out of the standards people set — a belief or value system. This level may be illustrated by the way people think things ought to be — values that are important.

behave in response to those perceptions. This last point illustrates how individuals strive to reduce the discrepancy between their perceptions of the environment and what they want — their goals. Furthermore, each level is linked to control systems, although PCT posits that individuals are not aware of levels of perception at or above the one from which we are currently functioning (Goldstein, 1990).

Making Sense of PCT

It is not easy to understand the different levels of the human control system and the ways in which they fit together. The bad news is that PCT is a complicated system often requiring years to learn. The good news is that techniques for getting children to think and make a plan are fairly easy to learn, practice, and implement. Before moving into a discussion of those techniques, it may be helpful to see how Ford (1990) described some of the more difficult PCT concepts:

- People control perceptions, not actions. If you think about it carefully, you will realize that the only thing you can ever do is influence what you perceive; actions, to the extent that you experience them at all, are just another kind of perception.
- The perceptual world of one person is likely to be quite different from that of another. Thus it is not always easy to understand what another person is "doing" (i.e., which perceptions they are controlling).
- Learning is a process of reorganization which involves the construction of new ways to control, not to act.
- The "outside world" is experienced and controlled in terms of a hierarchy of different classes of perceptual variables that are all being controlled simultaneously.
- Consciousness can be directed at each perceptual level as necessary. It is usually directed at the higher levels because most conflicts seem to originate from inconsistent references for system concepts, principles, or programs.

- Differences exist in the speed of operation of control systems which control perceptions at varying levels. It takes longer to correct the perception of a principle than of a configuration.
- Feelings and emotions are perceptions of the status of control systems.
- Memories are replays of controlled perceptions.
- Control of other people involves controlling control systems. In the long or short run, this approach to dealing with people is almost certain to lead to interpersonal conflict. (pp. 117-118)

Ford (1990) believes that people have difficulty understanding PCT because its basic assumption — that behavior controls perception — conflicts with the more popular idea that perception controls behavior. After all, individuals appear to see perception controlling behavior all the time — the perception of a car speeding through a residential area makes parents grab their children's hands. Yet PCT posits that the behavior of grabbing the children's hands maintains the perception of wanting them to be safe. Although PCT is still in the process of gaining acceptance in educational and psychological circles, it nevertheless holds much promise for ultimately explaining the purpose of behavior. Because this last statement may sound somewhat pretentious, I will now relate some currently accepted notions of behavior to PCT.

There is consensus that all behavior is purposeful (Neel & Cessna, 1993). When an individual of any age acts, even with behaviors considered to be inappropriate, he or she does so to achieve a result. The desired result, or outcome, can be viewed as the intent or function of the behavior. In turn, the intent of the behavior will impact on the form the behavior takes to achieve the desired outcome. For example, a child may physically aggress against another child in order to obtain the attention of a peer group with which he wants to affiliate. Although aggression may be considered inappropriate, the desired outcomes — attention and affiliation — are ones most humans seek. PCT would simply say that aggression maintains the child's percep-

tion of wanting attention and affiliation. In this sense the words *intent* and *outcome* are closely related to the word *goal* — the latter of which plays a prominent role in PCT.

Goals also play a prominent role in the cognitive-behavioral framework of self-regulation proposed by Kanfer and Gaelick-Buys (1991). They described how self-regulation is activated when a person's reaction to a currently unsatisfactory situation leads her toward a new goal. Motivation for attaining the goal increases as the person thinks of a more desirable state of affairs. As the goal is formulated more clearly, the person begins to examine possible strategies and behaviors to accomplish the desired goal. Once a decision has been made to work toward a certain goal, the person begins the task of translating the decision into action.

At this point, the person must enact strategies, monitor and adjust behavior as necessary, develop rules to facilitate generalization, and continue the new behavior to maintain the desired goal state. Notice that Kanfer and Gaelick-Buys stress the importance of behavior to maintain the goal state. In PCT, the goal state would refer to a person's perceptions of what he wants. Hence, behavior maintains perception.

Questioning Method for Getting Children and Youth to Think

3

Questioning children and youth represents the first step in PCT to teach them self-control (Ford, 1994). The idea behind questioning is to help students identify their goals and evaluate whether their behavior is helping or inhibiting the acquisition of their goals. If students see that their behavior is not helping them accomplish their goals, then intervention focuses on helping them identify healthy goals and making a plan to accomplish them — the latter being the focus of the final section of this monograph.

The PCT vision of a self-controlled person is one in which error signals—discrepancies between perceptions and goals—are kept close to zero. This means teaching children and youth to select, with full awareness and commitment, appropriate goals to pursue and behaviors to reach them in a socially appropriate manner. When error signals arise, students are taught to work through them by performing socially appropriate behaviors to reach their goals rather than experiencing psychological distress. Goldstein (1990) succinctly summed up the self-controlled person:

> The healthy personality can selectively attend to any level of perception from the highest "system" level to the lowest "intensity" level. This ability to shift awareness is important for monitoring error signals and directing learning. When minor environmental disturbances occur, the health personality adjusts actions automatically, being flexible in the means used to obtain and maintain goals. When changing environmental circumstances that make old ways of controlling ineffective, the healthy personality can learn new ways. (p. 111)

In the next section, I will elaborate upon the rationale for questioning children and youth and describe the five questions recommended by Ford (1994) for teaching them to think about their goals and behavior.

Rationale for Questioning

Children, like adults, each have unique experiences and have organized those experiences into equally unique sets of judgments about the nature of the world and rules to live by relative to the context in which their view is operating. Therefore, lecturing or otherwise telling children and youth that their goals and behavior are inappropriate will create resistance because these statements are contrary to the students' frame of reference (Maag, 1991). Instead, education professionals need to show respect for children's world view and help them solve problems by operating within their frame of reference. Unfortunately, adults do not have direct access to how children organize their internal experiences and are, therefore, left with one of two options:

Option 1: Adults can mirror back to children their verbal and nonverbal behavior — a process known as creating rapport (Maag, 1988). Gordon and Meyers-Anderson (1981) believe that children will be more open to the therapeutic process when adults mirror the content of the child's model of the world.

Option 2: Adults can demonstrate that they respect, share, and preserve a child's model of the world by asking questions.

Ford (1994) stated that, by asking the right questions, adults can teach children to deal with themselves in such a way as to satisfy their own internal goals in the most effective ways possible.

Before describing the five PCT questions to get children and youth to think about their goals and behavior, Ford (1994) recommends always avoiding one question: Never ask a child "Why?" Asking "Why did you do it?" only serves to encourage young people to make excuses. Consequently, a lot of time and energy is wasted arguing over the validity of excuses and the education professional or other adult is sidetracked from the aim of teaching children and youth self-control. As Ford (1994) noted, asking "why" helps children to avoid taking responsibility. Think of the common situation in which a child asks her parent why she cannot go out with her friends. This question typically initiates an argument with the child finding fault with every reason given by the parent, no matter how sensibly stated. This situation is so aversive that when children or youth ask "Why?" parents often respond with "Because."

Questions That Get Children and Youth to Think

In PCT, children and youth behave in certain ways because they are trying to accomplish a goal or affect an outcome. Remember, PCT posits that individuals act to reduce the discrepancy between what they perceive in the environment and their wants and goals. Therefore, the initial step for teaching children and youth self-control is to ask them the following PCT questions:

- *"What were you doing?"* This accesses their perceptions of their specific choices or actions.
- *"What are the rules?"* The rules are what they need on which to base their choices.
- *"What happens when you break the rules?"* In other words, what are the consequences of the actions they have been choosing?

- *"Is that what you want to happen?"* Do they really want these consequences to happen to them?
- *"What would you rather be doing?"* or *"What do you want now?"* They are being asked to establish a current goal that they will use in the next step. (Ford, 1994, p. 44)

These questions help young people determine whether their behavior is getting them what they want — their goal. The questions can be used for any specific and reasonable rules and standards. For example, a teacher may have a class rule that students cannot go out for recess until they complete their math assignment. If a child is talking to a peer, the following dialogue might take place:

Teacher: *"What are you doing?"*

Student: "Talking to _____."

Teacher: *"What is the rule?"*

Student: "Finish work before going out to recess."

Teacher: *"What happens when you break the rule?"*

Student: "I can't go out for recess."

Teacher: *"Is that what you want to happen?"*

Student: "No."

Teacher: *"What do you want to happen instead?"*

Student: "I want to go out to recess."

This process helps students accept responsibility for their behavior and leads to the next step — making a plan to reach their goal.

Obviously, this process does not always go as smoothly as just illustrated. It is possible that, when asked what he wants, a student would answer that he wants to talk to a peer. When this type of answer occurs, it is helpful to ask him what he is doing compared to other things he wants. The purpose of this comparison is to help the child perceive that, although he might be getting some of what he wants when he talks, other wants are not being realized, such as being with friends and playing outside on the playground. Therefore, an appropriate follow-up question to the child's answer of wanting to

talk to a peer would be this: "*Would you have more time talking to peers on the playground or while you are completing the math assignment?*" Assuming the math assignment is to be completed toward the end of the period, it is likely that recess would provide a longer time and more flexible environment in which to carry on conversations with peers.

The prerequisite step for using the PCT questions effectively is to set specific and reasonable rules and standards. Most teachers understand the importance of establishing classroom rules. However, one important reason, germane to the present discussion, is that rules communicate a teacher's expectations regarding students' behavior in the classroom (Paine, Radicchi, Rosellini, Deutchman, & Darch, 1983). Furthermore, when students participate in rule making, they are less likely to make excuses for not knowing the rule and its consequence. In order for the questions just described to work, rules must be applied consistently with each student. Finally, Ford (1994) stresses the importance of staying focused and not being judgmental when using the questions. A teacher or other adult may initially get a lot of excuses from children when asking them the questions. Therefore, it is important to practice the questions in the sequence just presented.

Ford (1994) suggests repeatedly practicing the PCT questions with a totally compliant child — one who answers all questions truthfully and without any arguments — before dealing with children with EBD. Ford further advises setting up a role-play and having two friends help the teacher rehearse the questions until the sequence becomes automatic. One friend can role-play a compliant child while the other notes whether the teacher follows the sequence of questions correctly and avoids getting sidetracked. If you role-play a difficult child or one who offers even the slightest resistance, then you are more likely to get into arguments questioning the validity of answers and, consequently, take much longer to learn the sequence. After some practice, you can role-play a child with a little resistance. Each role-play in which you can stay focused on the questions becomes a cue to add a child with more resistance. It probably will not take too long before you become proficient at this process.

If you have well-established rules and standards and you practice asking the PCT questions until you become proficient, students will begin to become more aware of their behavior. Ideally, Ford (1994) believes that, through repeated exposure to the questions, you will only have to ask children who are being disruptive "*What are you doing?*" and they will think through the rest of the questions themselves. These beginnings of self-control may be manifested by children and youth who say something like "Yeah, right, I know" and then behave more appropriately. Ford termed this process *snap counseling* because you only need to ask one of two questions: "*What are you doing?*" or "*What is the rule?*" Children who are becoming self-controlled will internalize the PCT process automatically after just one question and reorganize themselves to behave appropriately.

The PCT questioning process is simple and has the potential for helping students to develop self-control in the situations in which they find themselves. That is not to say, however, that adults will not encounter resistance when using this process. When children or youth are not willing to obey a rule, you can ask them for various choices and to explain the consequences that result from making those choices. Consequences may include the loss of privileges or the placement of restrictions if the young persons involved are not willing to work at resolving a problem.

Lifting restrictions or returning privileges should be contingent upon their having committed to making a specific plan to resolve a problem — the latter being the focus of the next section. It is especially important to determine that children and youth have a strong commitment to making a plan. Any plan will undoubtedly fail if they have a weak commitment.

Determining the strength of a commitment is based on the adult's judgment of how much children want something relative to other wants. Returning to a previous example, a student may want to talk to a peer instead of working. But if he realizes that talking, rather than completing an assignment, will result in the loss of recess and greater opportunities to socialize, then his commitment for making

a plan may become stronger. Once strongly committed to resolving their problems, children and youth are ready to learn how to work out a plan to satisfy what they want (Ford, 1994).

Teaching Children and Youth to Make a Plan 4

Once students are committed to solving their problems, they can be taught how to make a plan. It is important that students be full participants in making a plan because they need to learn how to resolve conflicts in their lives, regardless of who is working with them. Plans are not always needed for children and youth who display minor and infrequent behavior problems. If they have been exposed to the PCT questions frequently enough, these situations may be ameliorated by asking, "*What are you doing?*" This *snap counseling* may also work for students with moderate and more frequent behavior problems who have gone through the plan-making process several times in the past (Ford, 1994).

However, making a plan is essential for students with EBD who display chronic and intractable behavior problems. These children may develop a plan simply to get an adult to "lighten up" on them. If this seems to be the case, it may be necessary to reevaluate a student's commitment to resolving a problem. If she is not committed, consequences should be applied, and the PCT questions should be reintroduced only when she is truly interested in working out things.

There are five components for teaching children to make a plan: (a) identify an area for improvement, (b) set a measurable goal, (c) create a detailed outline, (d) self-monitor performance, and (e) set up a

feedback chart depicting progress. These five components are designed to address the main goal of PCT: to reduce the discrepancy between what children and youth want and how they perceive the outcome of their behavior. However, as the following paragraphs illustrate, many of the components are based on the use of applied behavior analysis procedures such as operationally defining a behavior; setting goals; graphing performance; using contracting, self-monitoring, and self-evaluation; and monitoring progress. My purpose in presenting this information is to stress that, although PCT may be a complicated theory, its main goal can be reached through techniques familiar to many educators.

Identify Area for Improvement

The first step in teaching children and youth to make a plan is for them to identify an area for improvement. In order for a plan to succeed, the key is to "think small." Some students may have a tendency to set unrealistically high goals. For example, a child may identify as an area of improvement "learning multiplication facts." This area for improvement would be unrealistic if the child is currently having difficulty mastering addition and subtraction. Similarly, the identified area for improvement of playing on the first string basketball team after being on the third string for 2 years would be unreasonable and probably unachievable. Therefore, adults should help students to deal with one small accomplishable problem at a time. Small changes are easier for children and youth to make and help them build confidence in their ability to resolve larger conflicts in their lives.

Set a Measurable Goal

After a student has identified a specific area of needed improvement, he must set a measurable goal. A goal describes a level of performance toward which an individual should work. In PCT, a specific want and feedback mechanism must be established before a goal can be attained. For example, a child who wants to improve her math by deciding to "complete more problems" does not have a measurable

goal with which to deal. However, a goal of completing 20 multiplication problems correctly on math worksheets during daily, 15-minute, independent practice sessions has specific times, places, and products that can be easily measured. Any less specific goal and a student will not be able to measure how well she is doing.

Martin and Pear (1996) describe a number of conditions that should be met to ensure that goal setting is effective:

1. *Goals should be specific.* This recommendation makes common sense. Which of the following goals would help you save money? "Put some money in the bank" or "Put 10% of my monthly paycheck in the bank."
2. *Goals should be realistic.* "Do your best" goals are ineffective because they are too vague and run the risk of being too easy or unreachable. One way to help children set realistic goals is to consider their current level of performance and the range of performance on similar tasks by other children of comparable ability.
3. *Goals posted in a public place, such as on a bulletin board or at home on a refrigerator, are more likely to be achieved.* This practice sets the occasion for children to look at the goal.
4. *Deadlines should be included to help avoid procrastination and to increase the likelihood that children and youth will successfully complete the goal.*
5. *Goal setting is more effective when it includes a daily feedback component than when used in isolation.* A graph provides a daily record of the individual's progress.

Create a Detailed Outline

The next component for making a plan is helping children and youth create a detailed outline specifying how they are going to accomplish their goal. Ford (1994) developed several planning sheets for this purpose. Figure 2 depicts a planning sheet that incorporates aspects of his sheets along with components of a behavioral contract.

Figure 2. Planning Sheet.

(Side One)

Child's Name _____ Date _____

A. Responsibility Questions

1. What did I do? _____

_____

2. What rule did I break? _____

_____

3. What happens when I break the rules? _____

_____

4. Do I want that to happen? Yes ❑ No ❑

5. What would I rather have happen? _____

_____

6. Is what I am doing getting me what I want? Yes ❑ No ❑

B. Commitment

1. Am I willing to work at making things better? Yes ❑ No ❑

2. Write your commitment. _____

_____

_____

C. Detailed Plan

1. What is your goal? _____

_____

33

Figure 2, Continued.

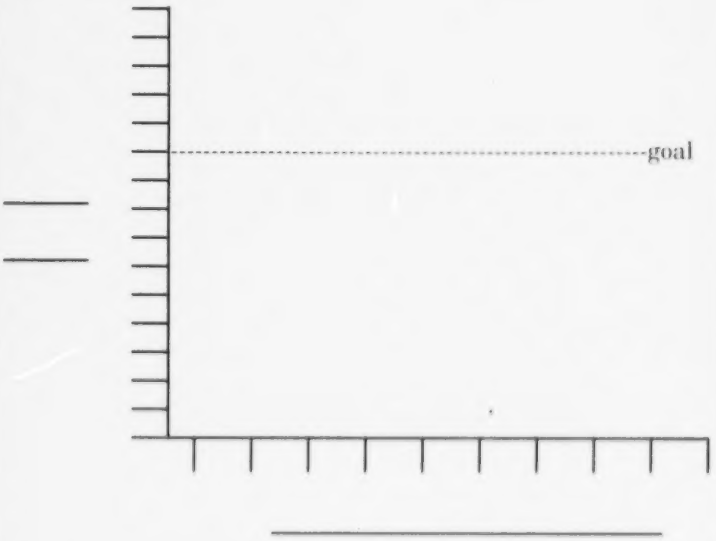
(Side Two)

2. What is your plan (who, what, when, where, how well?) _____

_____

3. Will this plan get you what you want? Yes ❑ No ❑

D. Goal Chart



E. Accountability

1. To whom will you report the progress of your plan? _____

2. How often? ____ When? ____ Where? ____

F. Signatures

Child _____ Teacher _____

Parent _____

Like a behavioral contract, the key ingredient is *specificity.* Therefore, any plan sheet should include a place for the following information: who, what, when, where, and how well. In the previous example, the child will complete 20 multiplication problems correctly at her desk during a 15-minute independent practice session. This information, when written out, looks very similar to behavioral objectives.

Like a behavioral contract, a completed planning sheet will automatically improve children's performance for several reasons (Cooper et al., 1987):

1. *The planning sheet involves rule-governed behavior.* A specified action will produce a specified consequence. Therefore, the planning sheet serves as a cue to perform the specified behaviors and tasks.
2. *The planning sheet is a public document.* The individual is constantly confronted with the permanent product that a written planning sheet represents.
3. *Because students are actively involved in completing a planning sheet, they are more likely to take responsibility for their actions and less likely to make excuses or blame others for their failures.*
4. *The planning sheet forces both children and adults to be specific.* Although the importance of specificity has already been discussed, it deserves reiteration because it is a determining factor as to whether children and youth will make plans they can accomplish.

Self-Monitor Performance

The goal chart in Figure 2 represents an individual student's progress in the area identified for improvement. Children and youth must have some type of data to plot on the goal chart in order to obtain feedback and evaluate their progress. Data can be gathered by having students self-monitor their performance. Self-monitoring typi-

cally has been conceptualized as a two-step process consisting of self-observation and self-recording (Mace, Brown, & West, 1987). Children and youth are engaging in self-observation when they are aware of, or discriminate, the presence or absence of their own behavior. The accuracy of an individual's discriminations is enhanced when the behavior or task is specified precisely. Self-recording occurs when students record specific features of their behavior (e.g., frequency, duration). Most of these recordings are based on physically tangible data such as the number of math problems completed, number of words spelled correctly, or number of questions answered. Figure 3 presents a self-recording sheet for the number of multiplication problems completed.

Reid and Harris (1989) described a simple procedure for teaching children and youth to self-monitor academic performance:

1. *Specify the behavior or task.* This process, essential for helping students make a plan, is familiar to most education professionals.
2. *Collect baseline data on the occurrence of the problematic behavior before having students self-monitor.* Baseline data provide children and youth with a visual representation of their behavior and rationale for developing a plan.
3. *Provide instructions.* Providing students with instructions takes about 15 to 20 minutes and consists of the following steps:
    - What will be self-monitored (e.g., the number of multiplication problems done correctly).
    - Which criteria are necessary for success (e.g., must show all steps in the multiplication problem and arrive at the correct answer).
    - How the results will be counted (the number correct can be tallied for each assignment using a recording form similar to the one illustrated in Figure 3).
    - How the results will be graphed (the number of correct problems must be recorded accurately).

- When the self-monitoring procedure is to be performed (e.g., after independent math practice sessions Monday through Friday).

4. *Model these steps for the students while verbalizing what you are doing at each step.*
5. *Model the process again but have the students verbalize what you are doing at each step.*
6. *Have the students model and verbalize the steps.* You can provide feedback at any point in which they are either modeling or verbalizing incorrectly.

An alternative procedure is to instruct children and youth to self-monitor attention. In this approach, students are taught to observe their own behavior, determine whether they are paying attention, and record the results when cued through the use of randomly presented tones from a tape recorder. Paying attention typically is defined as looking at materials, keeping eyes on teacher, writing answers, reading, and asking or answering a question. This procedure was developed by Hallahan, Lloyd, and Stoller (1982).

Recently, self-monitoring attention has been supplanted by self-monitoring performance for several reasons described by Reid (1996). First, simply because children are looking at a teacher or book does not mean they are actually paying attention. Second, self-monitoring attention is much more difficult to implement than self-monitoring performance. Third, self-monitoring performance has resulted in gains in on-task behaviors similar to those resulting from self-monitoring attention.

Set up a Feedback Chart

Recall that, in applying the principles of PCT, it is important for children and youth to have both a specific goal and a feedback mechanism that relates with what they want. A feedback chart, or graph, that reflects exactly what students are doing helps them accurately judge whether they are achieving their goal. This type of self-graph-

Figure 3. Self-Recording Sheet for Multiplication.

Child's Name _____ Date _____

Circle the number of multiplication problems you solved correctly on each daily assignment. Use the answer key to score your assignments.

Monday	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
Tuesday	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
Wednesday	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
Thursday	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30
Friday	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20
	21	22	23	24	25	26	27	28	29	30

ing has been found to enhance the effectiveness of self-monitoring (DiGangi, Maag, & Rutherford, 1991). It is also a prerequisite for children and youth engaging in self-evaluation which occurs when they compare their performance against some criteria (Mace et al., 1987).

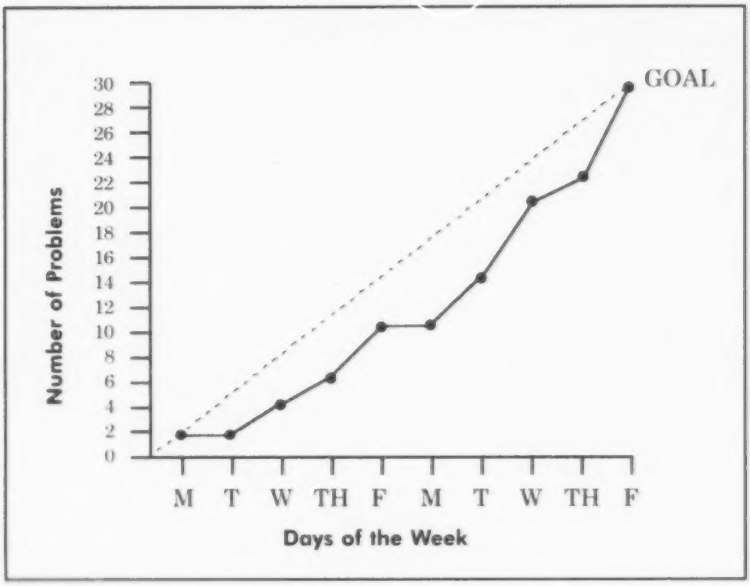
Children and youth need to examine the degree to which a match exists between their behavior and some self-selected standard. This process often results in students making a judgment as to whether their behavior has reached or exceeded a desired level or goal. If their behavior reaches a goal, children and youth may engage in self-rewarding verbalizations. Or, put into PCT terms, the discrepancy between what they perceive and what they want is reduced.

The goal chart in Figure 2 is an example of how students can receive feedback. To use this chart, an individual would write the target behavior or task on the lines appearing next to the vertical axis, such as "number of multiplication problems completed." Numbers appropriate to the behavior to be graphed are written next to the vertical tick marks. The line below the horizontal axis can be sued to write whether progress will be charted by the session, day, or week. The appropriate numbers can then be written below the horizontal tick marks. The most important aspect of this chart is the goal line. Students must set measurable goals.

For example, a goal may be to complete 20 multiplication problems a day. For this goal, a dotted horizontal line would be drawn from the tick mark indicating 20 multiplication problems (the 10th tick mark when numbered by 2s). Now, the student has a visual representation comparing the goal to how close he is to achieving it — exactly the way PCT says our brains function. According to PCT, the difference between students' goals and how close they come to achieving them is what drives students to work at improving. In other words, children and youth want something, and they currently perceive the status of what they want. Their behaviors are merely to change that status to conform to what they want.

The horizontal goal line appearing on the feedback chart in Figure 2 helps students visualize their daily performance in comparison to

Figure 4. Diagonal Goal Line Depicting Progress.



their goal. However, this type of goal line makes it difficult for some children and youth to visualize their progress as changes in performance over time (Howell, Fox, & Morehead, 1993). Progress is best depicted using a diagonal goal line such as the one appearing in Figure 4. In this figure, I have plotted hypothetical data for a goal of completing 20 multiplication problems correctly. Students with different trends (progression in a particular direction) are performing at different rates. Therefore, progress data indicate for individuals where they are and where they are going. Like the horizontal goal line in Figure 2, progress has little meaning without a specific and measurable goal. Some children and youth who acquire a performance rather than progress mentality may have more motivation problems in school (Dweck, 1986). Therefore, some education professionals may prefer to infuse a diagonal goal line for the feedback chart section of the Planning Sheet.

Summary and Conclusions 5

Perceptual control theory focuses on feedback — the results of behavior rather than the behaviors themselves. Accordingly, individuals deal with the external world to satisfy their own internal goals. Regardless of what happens to people as they interact with the environment, the ultimate reason for one's actions is satisfy one's own individually set values, priorities, and standards. In other words, individuals behave in a way to reduce the discrepancy between their perception of the environment and what they want — their goals.

Unlike other approaches, PCT posits that behavior controls perception — individuals behave in a way to maintain their perception. The brain is believed to work as a control system that decodes internal messages and develops a plan of action to reach a goal. Control systems are hierarchical ranging from the lowest "intensity" level to the highest "systems concept" level. When functioning optimally, individuals keep error signals at all levels — especially higher ones — close to zero. An error signal is a neutral entity that varies in proportion to the difference between one's perception of the environment and what he wants — his goal.

PCT suggests that people change themselves. Other people — teachers, parents, and therapists — can only be a disturbance which may initiate the learning process. A disturbance refers to any effect on a person's perception of the environment. Disturbances determine the value of controlled variables, namely one's behavior. A teacher who

tells a student to stop talking to a peer is a disturbance in the student's world affecting her ability to behave in a way to perceive what she wanted — peer attention. Therefore, the child may change her behavior from talking to writing a note in order to evade the disturbance while obtaining her goal. The learning process is initiated by asking children and youth a series of five questions (listed earlier in this monograph) designed to help them perceive their goals and to examine whether their behavior is getting them what they want. Through these questions, education professionals can learn how students perceive a problem area while teaching the students how to deal with themselves in such a way as to satisfy their own internal goals. Lecturing students, telling them what they should be doing, and making judgments about what is wrong with them represent counterproductive disturbances. Children and youth often react to these disturbances by engaging in counterproductive behavior. Individuals who become aggressive may be trying to eliminate the disturbance.

Once students' commitment to solving their problems is increased through the use of the PCT questions, they are ready to make a plan. Teaching children and youth to make a plan consists of several components. At each component, the key considerations are specificity and equal participation. Specificity ensures that students identify an appropriate area for improvement, set a measurable goal, create a detailed outline, effectively self-monitor their performance, and accurately graph the results of self-monitoring to obtain feedback on their progress.

Children and youth must be equal participants in developing a plan because they must ultimately learn how to resolve conflicts in their lives. The components of making a plan adhere to the basic tenants of PCT, although many aspects from other approaches may be familiar such as specificity, goal setting, self-monitoring, contracting, and graphing. Although plans should be generated by children and youth, the more involved parents and teachers are in plan development and implementation, the less likely children are to fail. A good plan is one in which the goal is attainable and the feedback is immediate.

As I mentioned at the beginning of this monograph, PCT is no panacea — especially for children and youth with EBD who exhibit chronic and recurrent behavior problems. Some students with EBD will actively refuse to answer the PCT questions or will not be interested in making a plan. Others will answer the questions, make a plan, and then promptly engage in the inappropriate behavior that initiated the intervention process. Ford (1994) describes several ways for dealing with children and youth who continually break rules:

1. *Ensure that the rules and the consequences for breaking them are clearly specified and consistently applied to all children and youth.*

2. *Have a hierarchy of restrictive environments in which students can be placed until they are willing to commit to making a plan for following the rules.* The less responsibly children and youth behave, the more restrictive the environment becomes in which they are placed. Levels of restriction could range from a study carrel in the back of a classroom, to a chair in the principal's office, to a special room elsewhere in the school environment with an adult trained in helping students acquire skills for getting along.

3. *Offer children and youth choices so they can decide at which level of social contact they are willing to behave responsibly.* This last point is critical. When adults make the choices, they are not teaching children how to act responsibly.

4. *Do not humiliate children or youth when they are in a restrictive environment.* Instead, treat them in a strict but fair and respectful way. Individuals earn their way out of a restrictive setting by making a plan for resolving their problems.

There is much more that could be said about a PCT approach to human behavior. Yet the basic tenants of PCT are fairly straightforward and easy to learn for those who have the patience and the inclination. Patience is not too difficult to come by, but the inclination is another matter especially because PCT requires individuals to unlearn conventional ways of thinking about behavior. Perhaps

the significance of PCT will come not from first understanding its basic tenants but rather from practitioners seeing that the techniques for teaching children and youth self-control resemble other approaches, are practical, and are reasonably easy to implement with a little practice. Given this promise, it seems an appropriate time for teachers and parents to take a closer look at the concepts of PCT.

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